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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,972	08/22/2003	Robert Aharonov	MAI-14602/16	8385
25006	7590	12/01/2006	EXAMINER	
GIFFORD, KRASS, GROH, SPRINKLE & CITKOWSKI, P.C PO BOX 7021 TROY, MI 48007-7021			IVEY, ELIZABETH D	
			ART UNIT	PAPER NUMBER
			1775	

DATE MAILED: 12/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/645,972

Applicant(s)

AHARONOV ET AL.

Examiner

Elizabeth Ivey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 10 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 5, 6 and 8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 6 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Double Patenting***

Claims 1, and 6 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 9 of U.S. Patent No. 6,274,257. Although the conflicting claims are not identical, they are not patentably distinct from each other because 6,274,257 encompass all of the limitations of claims 1,6, and 8 but do not expressly disclose a piston pin as the shape to which the coating is applied. However, the coating is expressed as being applied to a pin in the patent and it would have, therefore, been obvious to a person having ordinary skill in the art at the time of the invention to apply the coating to a pin shape such as a piston pin.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 rejected under 35 U.S.C. 102(b) as being anticipated by U.S. 6,274,257 to Aharonov et al.

Regarding claims 1, 6 and 8, Aharonov discloses cylindrical steel pins coated with doped CrN (column 2 lines 40-43 and column 4 line 18). Because said pins are cylindrical steel pins

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they could be used as piston pins. If a prior art structure is capable of performing the intended use as recited in the preamble, then it meets the claim. See, e.g., *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997).

Regarding claim 6, Aharonov discloses all of the limitations of claim 1 and although the references do not disclose a plurality of layers, mere duplication of parts (layers) has no patentable significance unless a new and unexpected result is produced. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

Regarding claim 8, Aharonov discloses all of the limitations of claim 1 and discloses the coating may be applied by physical vapor deposition and electron beam evaporation as claimed by applicant (column 3 lines 28-36 and column 6 lines 30-36). However, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. "If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process", (*In re Thorpe*, 227 USPQ 964,966). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (*In re Mamsi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 6, 8 and 21, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,213,075 to Ajayi et al. in view of U.S. Patent 6,640,779 B1 to Thiagarajan.

Regarding claims 1, 6, 8 and 21, Ajayi teaches parts of a combustion engine, particularly a pin, coated with CrN via CVD or PVD to reduce friction and wear during operation (abstract, column 1 lines 10-16 and 44-48 and column 2 lines 41-46). Although the pin of Ajayi is not a piston pin, Thiagarajan teaches a piston pin is a load bearing part of an engine for which improved lubrication or reduced friction and diminution of wear is sought. Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have applied the CrN coating of Ajayi to a piston pin to relieve the load bearing part of friction and

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wear as is done for the pin of Ajayi. Regarding the article claims with method limitations, [E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. "If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process", (*In re Thorpe*, 227 USPQ 964,966). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (*In re Mamsi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (*Fed. Cir. 1983*), *MPEP 2113*). Ajayi teaches the coating may be CrN, Cr<sub>2</sub>N, TiN, DLC and mixtures thereof (doped). Although the references do not disclose a plurality of layers, mere duplication of parts (layers) has no patentable significance unless a new and unexpected result is produced. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,213,075 to Ajayi et al. and U.S. Patent 6,640,779 B1 to Thiyagarajan as applied to claim 1 further in view of U.S. Patent 2,558,286 to Albertson.

Regarding claim 5, Ajayi and Thiyagarajan teach all of the limitations of claim 1 but do not expressly teach the coated pin to be polished. Albertson teaches polishing of frictional bearing surfaces such as engine components to improve surface finish, and wear resistance.

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Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to polish the coating on the component surface to further improve surface finish and wear resistance.

### ***Response to Arguments***

Examiner acknowledges applicant's amendment to claim 1 and cancellation of claims 7, 9 and 21-22 and withdraws rejections associated with the cancelled claims.

Applicant's arguments filed October 10, 2006 have been fully considered but they are not persuasive. Also, Applicant's arguments with respect to claims 1, 6 and 8 are moot in view of the new ground(s) of rejection.

Regarding applicant's argument that Ajayi does not show a doped CrN, examiner has shown that Ajayi does in fact provide a doped CrN. As indicated above, Ajayi teaches the coating may be CrN, Cr<sub>2</sub>N, TiN, DLC and mixtures thereof (doped).

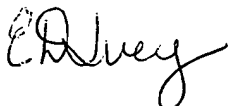
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Ivey whose telephone number is (571) 272-8432. The examiner can normally be reached on 7:00- 4:30 M-Th and 7:00-3:30 alt. Fridays.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Elizabeth D. Ivey



JENNIFER MCNEIL  
SUPERVISORY PATENT EXAMINER  
11/27/06